REMARKS

In response to the above-identified Final Office Action, Applicants have amended the application and respectfully request reconsideration thereof.

Sections 2 & 3: Nonstatutory Double Patenting Rejection

The pending claims 1-22 have been provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18 of copending Application No. 09/701,011 and also over claims 1-20 of copending application No. 09/271,008. It is stated in the Office Action that a timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. Applicants respectfully acknowledge this provisional obviousness-type double patenting rejection of the pending claims. However, Applicants respectfully decline to file a terminal disclaimer at this point in time because the present application and the copending applications have not been allowed. Applicants would like to withhold the filing of any such terminal disclaimer until either the present application or the copending application is allowed.

Section 4: Rejections under 35 U.S.C. §102

Claims 9, 11, 14, 19-20, and 22 have been rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,192,028 to Simmons et al. (hereinafter referred to as Simmons). To anticipate a claim, the prior art reference must teach every element of the claim. A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. Verdegaal Bros. v. Union Oil of California, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Applicants

respectfully submit that claims 9, 11, 14, 19-20, and 22, as amended, are not anticipated by Simmons for the reasons and explanations set out below.

As to the amended claim 9, Applicants respectfully submit that Simmons does not teach, disclose, or suggest the following element:

> "a network interface, coupled to the buffer, to receive a plurality of frames from a plurality of communication links, to store the frames in the corresponding plurality of records within the buffer in order of receipt, and to assign a pointer value to each of the plurality of records denoting a relative order of frame transmission of each of the plurality of frames, *the pointer value associated with each record in the buffer being used to determine an order in which the corresponding frame is promoted from the buffer to a system state*" (emphasis added)

Simmons discloses a network switch which has a shared memory architecture for storing data frames and a set of programmable thresholds to specify when flow control should be initiated on a selected network port (Simmons, Abstract). Specifically, Simmons states that the network switch includes a queue for storing free frame pointers, each specifying available memory locations in an external memory for storing data frames received from a network station (Simmons, Abstract). Furthermore, Simmons discloses that the network switch takes a frame pointer from a free buffer queue for each received data frame and stores the received data frame in the location in external memory specified by the frame pointer while a decision making engine within the switch determine the appropriate destination ports. (Simmons, Abstract). In particular, Simmons discloses that data packets from a network station are received by the corresponding MAC port and stored in the corresponding receive FIFO. The received data packets is output from the corresponding receive FIFO to the external memory interface for storage in the external memory (Simmons, Col. 6, lines 5-20). Simmons also states that the header of the received packet is also forwarded to a decision making engine which comprises an internal rules checker and an external rules checker

interface to determine which MAC ports will output the data packet (Simmons, Col. 6, lines 21-24). The internal rules checker and external rules checker provide the decision making logic for detemrining the destination MAC port for a given data packet (Simmons, Col. 6, lines 29-32). Simmons further states that the rules checker, based on information in the header, determines from where the frame packet will be cast, i.e., through which port or ports will the frame packet be transmitted (Col. 7, lines 47-56).

However, Simmons does not disclose or suggest the above recited element of claim 9. Specifically, Simmons does not disclose or suggest a network interface, coupled to a buffer, to receive a plurality of frames from a plurality of communication links, to store the frames in the corresponding plurality of records within the buffer in order of receipt, and to assign a pointer value to each of the plurality of records denoting a relative order of frame transmission of each of the plurality of frames, *the pointer value associated with each record in the buffer being used to determine an order in which the corresponding frame is promoted from the buffer to a system state* (emphasis added). In fact, as described above, Simmons explicitly discloses that the data packets received from a network station are stored in a corresponding receive FIFO (First-In-First-Out) buffer and then output from the corresponding receive FIFO buffer to the external memory interface for storage in the external memory. By definition, the FIFO (First-In-First-Out) buffer dictates the order in which the data packets are output from the FIFO buffer to the external memory interface for storage in the external memory. That is, a data packet that is stored first in the FIFO buffer will be output first to the external memory interface. It is clear that Simmons does not disclose or suggest any mechanism or method in which a pointer value associated with a frame or data packet stored in a receive buffer is used to determine an order in which the respective frame or data packet is sent from the buffer to another device (e.g., output from the buffer to the external memory interface). In fact, because of the nature of the receive FIFO buffer described in Simmons, the data packets as described in Simmons have to be read out

of the receive FIFO buffer in the first-in-first-out manner. This is clearly different and distinguishable from what is claimed in the above-recited element of claim 9.

Furthermore, the use of the frame pointer as described in Simmons is very different and highly distinguishable from what is claimed in the above-recited element of the amended claim 9. As described above, Simmons discloses that the network switch takes a frame pointer from a buffer queue for each received data frame and stores the received data frame in the location in the external memory specified by the frame pointer while a decision making engine determines the appropriate destination ports. Simmons does not disclose or suggest in anyway that the frame pointer as described in Simmons is or could be used to determine the order in which the received data frame is output from the receive FIFO buffer to the external memory interface for storage in the external memory. Again, such a use of frame pointers would not be possible in Simmons because Simmons uses First-In-First-Out receive buffers. In addition, at Col. 9, lines 21-43, Simmons discloses that the frame pointer is assigned to a destination port and that the corresponding data frame pointed to by the assigned frame pointer is fetched from the location in external memory and placed into the appropriate transmit FIFO for transmission. Again, this use of the frame pointer as described in Simmons is not what is claimed in the above-recited element of the amended claim 9. Using the frame pointer to specify the location in the external memory in which a frame is stored or the destination port for the frame is very different and highly distinguishable from using pointer values associated with frames stored in a buffer to determine an order in which the corresponding frames are read out of the buffer.

Because Simmons does not teach or suggest the above-recited element of the amended claim 9, Applicants respectfully submit that claim 9, as amended, is not anticipated or rendered obvious by Simmons. Accordingly, Applicants respectfully request that the rejection of claim 9 be withdrawn.

Since claims 10-14 depend from the amended claim 9 and include additional limitations, Applicants respectfully submit that claims 10-14 are also not anticipated or

rendered obvious by Simmons. Withdrawal of the rejections of these claims is therefore respectfully requested.

As to the amended claim 19, Applicants respectfully submit that Simmons does not disclose or suggest the following element for the reasons and explanations provided above with respect to the amended claim 9:

> "a network interface, coupled to the buffer and the multi-link trunk, to receive a plurality of data frames from the multi-link trunk, store the frames in the corresponding plurality of records in the buffer, and to assign a pointer value to each of the plurality of records denoting the relative order of frame transmission commencement of each of the plurality of frames, *the pointer value associated with each record being used to determine an order in which the corresponding frame is promoted from the buffer to a system state.*" (emphasis added)

Because Simmons does not teach or suggest the above-recited element, Applicants respectfully submit that the amended claim 19 is not anticipated or rendered obvious by Simmons. Accordingly, Applicants respectfully request that the rejection of claim 19 be withdrawn.

Since claims 20-22 depend from the amended claim 19 and include additional limitations, Applicants respectfully submit that claims 20-22 are also not anticipated or rendered obvious by Simmons. Withdrawal of the rejections of these claims is therefore respectfully requested.

Section 5: Rejections under 35 U.S.C. §103

Claims 1-8, 10, 12-13, 15-18, and 21 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Simmons in view of U.S. Patent No. 5, 784, 559 Frazier (hereinafter referred to as Frazier). To establish a prima facie case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination must be found in the prior art, not in

applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Applicants respectfully submit that claims 1-8, 10, 12-13, 15-18, and 21, as amended, are not obvious over Simmons in view of Frazier for the reasons and explanations set out below.

As to the amended claim 1, Applicants respectfully submit that Simmons and Frazier do not teach, disclose, or suggest the following limitation, for the reasons and explanations provided above with respect to the amended claim 9:

> "for each indication being asserted, generating a corresponding pointer value associated with the respective frame being transmitted over the corresponding communication link based, at least in part, on a relative order in which the respective indication is asserted, *the corresponding pointer value associated with each respective frame being used to determine an order in which the respective frame is promoted from a receive buffer to a system state.*" (emphasis added)

As discussed above, Simmons fails to disclose or suggest any mechanism or method in which a pointer value associated with a data frame is used to determine an order in which the respective frame is read out of a receive buffer. Again, Simmons explicitly states that the data packets received from a network station are stored in a receive First-In-First-Out (FIFO) buffer and output from the receive FIFO buffer to the external memory interface for storage in the external memory. Thus, the data packets stored in the receive FIFO buffer can only read out of the receive FIFO in one manner, i.e., first-in-first-out. Again, as explained above, the frame pointer as described in Simmons is not used to determine the order in which the data packets are read out of the receive FIFO buffer.

Frazier discloses a flow control method in a full-duplex Ethernet network in a lossless fashion using CSMA/CD. According to Frazier, uniquely identifiable flow control transmit on/off messages are transmitted by a receiving station about to be congested to the transmitting station whose data output is to be controlled (Frazier, Abstract). The transmitting station physical layer receives and decodes these messages. If XOFF is

recognized, the transmitting station continuously asserts CRS to its MAC layer at the MII, regardless of the prior CRS current state CRS is continuously asserted until the receiving station transmits an XON flow control signal to indicate its ability to accept further data (Frazier, Abstract, Col. 5, line 43 – Col. 6, line 33). However, Applicants are unable to find any disclosure or suggestion by Frazier that is directed to the above-recited element of the amended claim 1. There is no disclosure by Frazier which teaches or suggests using a pointer associated with a frame to determine an order in which the respective frame is read out of the receive buffer.

Because Simmons and Frazier do not teach or suggest the above-recited limitation of the amended claim 1, Applicants respectfully submit that the amended claim 1 is not obvious over Simmons in view of Frazier. Accordingly, Applicants respectfully request that the rejection of claim 1 be withdrawn. Since claims 2-8 depend from the amended claim 1 and include additional limitations, Applicants respectfully submit that claims 2-8 are also not obvious over Simmons in view of Frazier. Withdrawal of the rejections of these claims is therefore respectfully requested.

As to the amended claim 15, Applicants respectfully submit that Simmons and Frazier do not teach, disclose, or suggest the following limitation, for the reasons and explanations provided above with respect to the amended claim 1 and 9:

> "assigning a plurality of pointer values to a corresponding plurality of records in a buffer receiving the corresponding plurality of transmitted frames based, at least in part, on a relative order in which the indications are received, *the pointer values associated with the records being used to determine an order in which the corresponding frames are promoted from the buffer to a system state.*" (emphasis added)

Accordingly, Applicants respectfully request that the rejection of claim 15 be withdrawn. Since claims 16-18 depend from the amended claim 15 and include additional

limitations, Applicants respectfully submit that claims 16-18 are also not obvious over Simmons in view of Frazier. Withdrawal of the rejections of these claims is therefore respectfully requested.

Summary

Having made the above amendments and remarks, Applicants respectfully submit that all pending claims are in a condition for allowance, which is now earnestly solicited.

VERSION WITH MARKINGS TO SHOW CHANGES MADE

1. (Amended) A method for preserving frame order of a plurality of frames transmitted over a plurality of communication links, the method comprising:

receiving the plurality of frames transmitted over the plurality of communication links;

asserting a plurality of indications each denoting the start of frame transmission on a corresponding communication link;

for each indication being asserted, generating a corresponding pointer value associated with the respective frame being transmitted over the corresponding communication link based, at least in part, on a relative order in which the respective indication is asserted, the corresponding pointer value associated with each respective frame being used to determine an order in which the respective frame is promoted from a receive buffer to a system state.

[(a) receiving up to a plurality of indications denoting the start of frame transmission on a corresponding plurality of communication links; and

(b) assigning a pointer value to each of a plurality of records in a buffer receiving the corresponding plurality of frames based, at least in part, on a relative order in which the indications are received.]

9. (Amended) An apparatus comprising:

a buffer having a plurality of records; and

a network interface, coupled to the buffer, to receive a plurality of frames from a plurality of communication links, to store the frames in [a] the corresponding plurality of records within the buffer in order of receipt, and to assign a pointer value to each of the plurality of records denoting a relative order of frame transmission of each of the plurality of frames, the pointer value associated with each record in the buffer being used to determine an order in which the corresponding frame is promoted from the buffer to a system state.

15. (Amended) In a data network, a method for preserving frame order of a plurality of frames transmitted across a multi-link trunk, the method comprising:

[(a)] receiving up to a plurality of indications denoting commencement of frame transmission on the multi-link trunk; and

[(b)] assigning a plurality of pointer values to a corresponding plurality of records in a buffer receiving the corresponding plurality of transmitted frames based, at least in part, on a relative order in which the indications are received, the pointer values associated with the records being used to determine an order in which the corresponding frames are promoted from the buffer to a system state.

19. (Amended) A network device to communicate with other network devices through a multi-link trunk, the network device comprising:

a buffer having a plurality of records; and

a network interface, coupled to the buffer and the multi-link trunk, to receive a plurality of data frames from the multi-link trunk, store the frames in [a] the corresponding plurality of records in the buffer, and to assign a pointer value to each of the plurality of records denoting the relative order of frame transmission commencement of each of the plurality of frames, the pointer value associated with each record being used to determine an order in which the corresponding frame is promoted from the buffer to a system state.

Deposit Account Authorization

Authorization is hereby given to charge our Deposit Account No. 02-2666 for any charges that may be due. Furthermore, if an extension is required, then Applicants hereby request such an extension.

Respectfully submitted,

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Dated: September 30, 2002

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Box AF; Assistant Commissioner for Patents, Washington, D.C. 20231 on:
September 30, 2002

Maria N. Sauzedo — *Date* 9/30/02